



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:  
RAVKIN et al.

Application No.: 10/607,611

Filed: June 27, 2003

For: APPARATUS AND METHOD FOR  
DEPOSITING AND PLANARIZING THIN  
FILMS OF SEMICONDUCTOR WAFERS

Group: 1742

Examiner: Wilkins III, Harry D.

Docket No.: LAM2P428

Date: July 14, 2006

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450 on July 14, 2006.

Signed: \_\_\_\_\_

Sylvia Castillo

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §§1.56 AND 1.97(c)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The references listed in the attached PTO Form 1449, (the copies of references which are not U.S. Patents have been attached), may be material to examination of the above-identified patent application. Applicants submit these references in compliance with their duty of disclosure pursuant to 37 CFR §§1.56 and 1.97. The Examiner is requested to make this citation of official record in this application.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

The fee of \$180.00 as required in 37 C.F.R. § 1.17(p) is included with this transmittal. The Commissioner is authorized to charge any additional fees that may be due to our Deposit Account No. 50-0805 (Order No. LAM2P428). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,  
MARTINE PENILLA & GENCARELLA, LLP

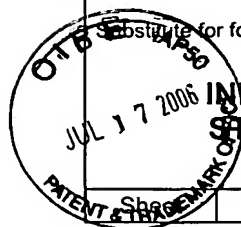
Albert S. Penilla, Esq.  
Reg. No. 39,487

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

1 of 6

## Complete if Known

Application Number	10/607,611
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First Named Inventor	RAVKIN et al.
Art Unit	1742
Examiner Name	Wilkins III, Harry D.
Attorney Docket Number	LAM2P428

## U.S. Patent Documents

Examiner Initials	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	A	2002/0121290 A1	09/05/02	Tang et al.	
	B	2003/0091754 A1	05/15/03	Chihani et al.	
	C	2003/0092264 A1	05/15/03	Shinji et al.	
	D	2004/0060573 A1	04/01/04	Woods	
	E	2004/0069319 A1	04/15/04	Boyd et al.	
	F	2004/0069329 A1	04/15/04	de Larios et al.	
	G	2004/0136494 A1	07/15/04	Lof et al.	
	H	2004/0178060 A1	09/16/04	Ravkin et al.	
	I	2004/0182422 A1	09/23/04	Boyd et al.	
	J	2005/0132515 A1	12/18/03	Boyd et al.	
	K	2005/0139318 A1	06/30/05	Woods et al.	

## Foreign Patent Documents

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		Country Code <sup>3</sup> -Number- <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	L	EP 0 905 746 A1	3/31/99	Interniversitair Micro-Elektronica Centrum VZW		<input type="checkbox"/>
	M	EP 0 905 747 A1	3/31/99	Interniversitair Micro-Elektronica Centrum VZW		<input type="checkbox"/>
	N	EP 1 489 461 A1	12/22/04	ASML Netherlands B.V.		<input type="checkbox"/>
	O	EP 1 489 462 A2	12/22/04	ASML Holding N.V.		<input type="checkbox"/>

## Non Patent Literature Documents

Examiner Initial	Cite No.	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	P	J.A. Britten, "A moving-zone Marangoni drying process for critical cleaning and wet processing," October, 1997, <i>Solid State Technology</i>
	Q	OWA et al. "Immersion lithography; its potential performance and issues", Proceedings of the SPIE, SPIE, Bellingham, VA, US, Vol. 5040, No. 1, February 28, 2003, pages 724-733, XP002294500

Examiner Signature	Date Considered
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Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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		Number-Kind Code <sup>2</sup> (if known)			
	A	2005/0145265 A1	07/07/05	Ravkin et al.	
	B	2005/0145267 A1	04/01/04	Korolik et al.	
	C	2005/0145268 A1	04/01/04	Woods	
	D	2005/0148197 A1	04/01/04	Woods et al.	
	E	2005/0217703 A1	10/06/05	O'Donnell	
	F	2006/0064895 A1	03/30/06	Garcia et al.	
	G	3,953,265	04/27/76	Hood	
	H	4,086,870	05/02/78	Canavello et al.	
	I	4,444,492	04/24/84	Lee	
	J	4,838,289	06/13/89	Kottman et al.	
	K	5,102,494	04/07/92	Harvey et al.	

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		Country Code <sup>3</sup> -Number- <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	L	JP 2003-151948 (Patent Abstract in English provided)	05/23/03	Seiko Epson Corporation		<input type="checkbox"/>
	M	JP02280330 (Patent Abstract in English provided)	11/16/90	Mitsubishi Electric Corporation		<input type="checkbox"/>
	N	JP02309638 (Patent Abstract in English provided)	12/25/90	Fujitsu Ltd.		<input type="checkbox"/>
	O	JP05837190 (Patent Abstract and Summary in English provided)	03/04/83	Sonitsukusu: KK		

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	P	LIM et al., "Atomic Layer deposition of transition metals", Department of Chemistry and Chemical Biology, Harvard University, Nature Publishing Group, Volume 2, November 2003, Pages 749-754
	Q	ICKnowledge LLC, "Technology Backgrounder: Atomic Layer Deposition", ICKnowledge.com, 2004, Pages 1-7

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		Number-Kind Code <sup>2</sup> (if known)			
	A	5,180,431	01/19/93	Sugimoto et al.	
	B	5,271,774	12/21/93	Leenaars et al.	
	C	5,294,257	03/15/94	Kelly et al.	
	D	5,343,234	08/30/94	Kuehnle	
	E	5,361,449	11/08/94	Akimoto	
	F	5,472,502	12/05/95	Batchelder	
	G	5,558,111	09/24/96	Lofaro	
	H	5,601,655	02/11/97	Bok et al.	
	I	5,660,642	08/26/97	Britten	
	J	5,705,223	01/06/98	Bunkofske	
	K	5,709,757	01/20/98	Hatano et al.	

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		Country Code <sup>3</sup> -Number- <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	L	JP08277486 (Patent Abstract in English and machine generated English translation provided)	10/22/96	Dainippon Printing Co. Ltd.		<input type="checkbox"/>
	M	JP11031672 (Patent Abstract in English provided)	02/02/99	Hitachi Ltd.		<input type="checkbox"/>
	N	JP11350169 (Patent Abstract in English and machine generated English translation provided)	12/21/99	Chemitoronics Co.		<input type="checkbox"/>
	O	WO 02/01613 A3	1/3/02	Applied Materials, Inc.		<input type="checkbox"/>

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Examiner Initial	Cite No.	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	P	"Chemical vapor deposition", Wikipedia, the free encyclopedia, <a href="http://en.wikipedia.org/wiki/Chemical_vapor_deposition">http://en.wikipedia.org/wiki/Chemical_vapor_deposition</a> , 2005, Page 1-2
	Q	SIGMA-ALDRICH, "Atomic Layer Deposition (ALD)", <a href="http://www.sigmaaldrich.com/Area_of_Interest/Chemistry/Materials_Science/Thin_Films">http://www.sigmaaldrich.com/Area_of_Interest/Chemistry/Materials_Science/Thin_Films</a> , 2005, Pages 1-2

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	A	5,807,522	09/15/98	Brown et al.	
	B	5,882,433	03/16/99	Ueno	
	C	5,893,004	04/06/99	Yamamura	
	D	5,945,351	08/31/99	Mathuni	
	E	5,975,098	11/02/99	Yoshitani et al.	
	F	5,989,478	11/23/99	Ouellette et al.	
	G	5,997,653	12/07/99	Yamasaka	
	H	6,086,454	07/11/00	Watanabe et al.	
	I	6,092,937	07/25/00	Snodgrass et al.	
	J	6,103,636	08/15/00	Zahorik et al.	
	K	6,108,932	08/29/00	Chai	

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		Country Code <sup>3</sup> -Number- <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	L	WO 02/101795 A3	12/19/02	Verteq, Inc.		<input type="checkbox"/>
	M	WO 02/32825 A1	4/25/02	The Regents of the University of California		<input type="checkbox"/>
	N	WO 03/014416 A2	02/20/03	Ebara Corporation		<input type="checkbox"/>
	O	WO 99/16109 A1	4/1/99	Interniversitair Micro-Elektronica Centrum VZW		<input type="checkbox"/>

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	Q	

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	A	6,214,513	04/10/01	Cai et al.	
	B	6,230,722	05/15/01	Mitsumori et al.	
	C	6,398,975	06/04/02	Mertens et al.	
	D	6,417,117	07/09/02	Davis	
	E	6,433,541	08/13/02	Lehman et al.	
	F	6,474,786	11/05/02	Percin et al.	
	G	6,514,570	02/04/03	Matsuyama et al.	
	H	6,530,823	03/11/03	Goodarz et al.	
	I	6,531,206	03/11/03	Johnston et al.	
	J	6,550,988	04/22/03	Sugimoto et al.	
	K	6,555,017	04/29/03	Rushford et al.	

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	L	WO 99/49504	9/30/99	Nippon Kogaku KK		<input type="checkbox"/>
	M	WO 2004/030051 A2	04/08/04	Lam Research Corporation		<input type="checkbox"/>
	N	JP 62150828 A ((Patent Abstract in English provided))	07/04/87	Mitsubishi Electric Corporation		<input type="checkbox"/>
	O					

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	A	6,616,772	09/09/03	De Larios et al.	
	B	6,689,323	02/10/04	Fisher et al.	
	C	6,764,720	07/20/04	Pui et al.	
	D	6,799,584	10/05/04	Yogev et al.	
	E	6,851,435	02/08/05	Mertens et al.	
	F	6,854,473	02/15/05	Hanson et al.	
	G	6,954,993	10/18/05	Smith et al.	
	H	6,988,326	01/24/06	O'Donnell et al	
	I	6,988,327	01/24/06	Garcia et al.	
	J	7,000,622	02/21/06	Woods et al.	
	K	7,069,937	07/04/06	Garcia et al.	

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	O					<input type="checkbox"/>

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